

WE CLAIM:

1. A flexible applicator for applying an oil-in-water emulsion comprising:
 - (a) an oil-in-water emulsion comprising:
 - (i) allantoin; and
 - (ii) an emulsifier system including beeswax and an anionic emulsifier that is substantially hydrophilic and is soluble in water; and
 - (iii) an acid to adjust the pH of the emulsion to a value from about 3.0 to about 6.0, the allantoin being stable in the emulsion for at least 90 days at 40°C; and
 - (b) a flexible element that adsorbs or absorbs the emulsion such that the emulsion is applied to the skin of a patient on whom the flexible applicator is placed.
2. The flexible applicator of claim 1 wherein the pH of the emulsion is from about 4.5 to about 5.8 after the addition of acid.
3. The flexible applicator of claim 1 wherein the emulsifier is selected from the group consisting of ammonium lauryl sulfate, sodium lauryl sulfate, sodium laureth sulfate, sodium oleyl succinate, ammonium lauryl sulfosuccinate, sodium dodecylbenzenesulfonate, ammonium laureth sulfate, and sodium lauryl sarcosinate.
4. The flexible applicator of claim 3 wherein the emulsifier is sodium lauryl sulfate.
5. The flexible applicator of claim 1 wherein the emulsion comprises at least one organic acid of from 2 to 22 carbon atoms to adjust the pH to from about 3.0 to about 6.0.
6. The flexible applicator of claim 5 wherein the emulsion comprises at least one organic acid selected from the group consisting of citric acid, ascorbic acid, glycolic acid, lactic acid, benzoic acid, and salicylic acid.
7. The flexible applicator of claim 6 wherein the pH of the emulsion is from about 4.5 to about 5.8.

8. The flexible applicator of claim 1 wherein the emulsion comprises at least one inorganic acid selected from the group consisting of hydrochloric acid, sulfuric acid, and phosphoric acid to adjust the pH to from about 3.0 to about 6.0.

9. The flexible applicator of claim 8 wherein the pH of the emulsion is from about 4.5 to about 5.8.

10. The flexible applicator of claim 1 wherein the emulsion comprises at least one organic acid of from 2 to 22 carbon atoms and at least one inorganic acid selected from the group consisting of hydrochloric acid, sulfuric acid, and phosphoric acid to adjust the pH from about 3.0 to about 6.0.

11. The flexible applicator of claim 10 wherein the pH of the emulsion is from about 4.5 to about 5.8.

12. A flexible applicator for applying an oil-in-water emulsion comprising:

- (a) an oil-in-water emulsion comprising:
 - (i) allantoin;
 - (ii) an emollient component comprising:
 - (A) lanolin oil;
 - (B) cetyl alcohol;
 - (C) stearyl alcohol;
 - (D) cod liver oil;
 - (E) butylated hydroxytoluene;
 - (iii) an emulsifier system comprising at least one nonionic emulsifier that is an ethoxylated ether or an ethoxylated ester whose carbon chain length ranges from 8 to 22 carbon atoms; and
 - (iv) at least one acid selected from the group consisting of:
 - (A) an organic acid of from 2 to 22 carbon atoms; and
 - (B) an inorganic acid selected from the group consisting of hydrochloric acid, sulfuric acid, and phosphoric acid to adjust the pH to from about 3.0 to about 6.0, the allantoin being stable in the emulsion for at least 90 days at 40°C; and

(b) a flexible element that adsorbs or absorbs the emulsion such that the emulsion is applied to the skin of a patient on whom the flexible applicator is placed.

13. The flexible applicator of claim 12 wherein the pH of the emulsion is from about 4.5 to about 5.8.

14. A flexible applicator for applying an oil-in-water emulsion comprising:

(a) an oil-in-water emulsion comprising:

(i) allantoin; and

(ii) an emulsifier system including at least one nonionic emulsifier that is an ethoxylated ether or an ethoxylated ester whose carbon chain length ranges from 8 to 22 carbon atoms; and

(iii) an acid to adjust the pH of the emulsion to a value from about 3.0 to about 6.0, the allantoin being stable in the emulsion for at least 90 days at 40°C; and

(b) a flexible element that adsorbs or absorbs the emulsion such that the emulsion is applied to the skin of a patient on whom the flexible applicator is placed.

15. The flexible applicator of claim 14 wherein the pH of the emulsion is from about 4.5 to about 5.8.

16. The flexible applicator of claim 14 wherein the emulsion comprises at least one organic acid of from 2 to 22 carbon atoms.

17. The flexible applicator of claim 16 wherein the emulsion comprises at least one organic acid selected from the group consisting of citric acid, ascorbic acid, glycolic acid, lactic acid, benzoic acid, and salicylic acid.

18. The flexible applicator of claim 14 wherein the emulsion comprises at least one inorganic acid selected from the group consisting of hydrochloric acid, sulfuric acid, and phosphoric acid.

19. The flexible applicator of claim 14 wherein the emulsion comprises at least one organic acid of from 2 to 22 carbon atoms and at least one inorganic acid selected from the group consisting of hydrochloric acid, sulfuric acid, and phosphoric acid.

20. The flexible applicator of claim 1 wherein the emulsion further comprises an emollient component comprising at least one ingredient selected from the group consisting of lanolin oil, cetyl alcohol, stearyl alcohol, cod liver oil, and butylated hydroxytoluene.

21. The flexible applicator of claim 20 wherein the emollient component comprises all of lanolin oil, cetyl alcohol, stearyl alcohol, cod liver oil, and butylated hydroxytoluene.

22. The flexible applicator of claim 14 wherein the emulsion further comprises an emollient component comprising at least one ingredient selected from the group consisting of lanolin oil, cetyl alcohol, stearyl alcohol, cod liver oil, and butylated hydroxytoluene.

23. The flexible applicator of claim 22 wherein the emollient component comprises all of lanolin oil, cetyl alcohol, stearyl alcohol, cod liver oil, and butylated hydroxytoluene.

24. The flexible applicator of claim 1 wherein the emulsion further comprises St. John's wort extract.

25. The flexible applicator of claim 14 wherein the emulsion further comprises St. John's wort extract.

26. The flexible applicator of claim 1 wherein the emulsion further comprises witch hazel extract.

27. The flexible applicator of claim 14 wherein the emulsion further comprises witch hazel extract.

28. The flexible applicator of claim 1 wherein the emulsion further comprises chamomile extract.

29. The flexible applicator of claim 14 wherein the emulsion further comprises chamomile extract.

30. The flexible applicator of claim 1 wherein the emulsion further comprises arnica extract.

31. The flexible applicator of claim 14 wherein the emulsion further comprises arnica extract.

32. The flexible applicator of claim 1 wherein the emulsion further comprises St. John's wort extract, witch hazel extract, chamomile extract, and arnica extract.

33. The flexible applicator of claim 14 wherein the emulsion further comprises St. John's wort extract, witch hazel extract, chamomile extract, and arnica extract.

34. The flexible applicator of claim 1 wherein the emulsion further comprises a preservative component.

35. The flexible applicator of claim 34 wherein the preservative component comprises at least one preservative selected from the group consisting of methylparaben and propylparaben.

36. The flexible applicator of claim 14 wherein the emulsion further comprises a preservative component.

37. The flexible applicator of claim 36 where the preservative component is selected from the group consisting of methylparaben and propylparaben.

38. The flexible applicator of claim 1 wherein the emulsion further comprises a chelating agent.

39. The flexible applicator of claim 38 wherein the chelating agent is tetrasodium EDTA.

40. The flexible applicator of claim 14 wherein the emulsion further comprises a chelating agent.

41. The composition of claim 40 wherein the chelating agent is tetrasodium EDTA.

42. The composition of claim 1 further comprising a solvent component.

43. The flexible applicator of claim 42 wherein the solvent component comprises at least one solvent selected from the group consisting of propylene glycol, butylene glycol, and glycerin.

44. The flexible applicator of claim 43 wherein the solvent component is propylene glycol.

45. The flexible applicator of claim 14 wherein the emulsion further comprises a solvent component.

46. The flexible applicator of claim 45 wherein the solvent component comprises at least one solvent selected from the group consisting of propylene glycol, butylene glycol, and glycerin.

47. The flexible applicator of claim 46 wherein the solvent component is propylene glycol.

48. A flexible applicator for applying an oil-in-water emulsion comprising:

(a) an oil-in-water emulsion comprising:

- (i) water;
- (ii) sodium lauryl sulfate;
- (iii) propylene glycol;
- (iv) tetrasodium EDTA;
- (v) citric acid;
- (vi) lanolin oil;
- (vii) cetyl alcohol;
- (viii) stearyl alcohol;
- (ix) beeswax;
- (x) cod liver oil;
- (xi) butylated hydroxytoluene;
- (xii) St. John's wort extract;
- (xiii) witch hazel extract;
- (xiv) chamomile extract;
- (xv) arnica extract;
- (xvi) methylparaben;
- (xvii) propylparaben;
- (xviii) allantoin; and
- (xix) fragrance;

wherein the pH of the emulsion is from about 3.0 to about 6.0, the allantoin being stable in the emulsion for at least 90 days at 40°C; and

(b) a flexible element that adsorbs or absorbs the emulsion such that the emulsion is applied to the skin of a patient on whom the flexible applicator is placed.

49. The flexible applicator of claim 48 wherein the pH of the emulsion is from about 4.5 to about 5.8.

50. A flexible applicator for applying an oil-in-water emulsion comprising:

- (a) an oil-in-water emulsion comprising:
 - (i) from about 50% to about 90% of water;

- (ii) from about 0.5% to about 2.5% of 30% sodium lauryl sulfate;
- (iii) from about 2.0% to about 9.0% of propylene glycol;
- (iv) from about 0.05% to about 0.50% of tetrasodium EDTA;
- (v) from about 0.05% to about 0.5% of citric acid;
- (vi) from about 5% to about 15% of lanolin oil;
- (vii) from about 3% to about 10% of cetyl alcohol;
- (viii) from about 1% to about 5% of stearyl alcohol;
- (ix) from about 0.5% to about 2.5% of beeswax;
- (x) from about 1.0% to about 7.0% of cod liver oil;
- (xi) from about 0.1% to about 1.0% of butylated hydroxytoluene;
- (xii) from about 0.05% to about 0.50% of St. John's wort extract;
- (xiii) from about 0.05% to about 0.50% of witch hazel extract;
- (xiv) from about 0.05% to about 0.5% of chamomile extract;
- (xv) from about 0.05% to about 0.5% of arnica extract;
- (xvi) from about 0.1% to about 0.5% of methylparaben;
- (xvii) from about 0.1% to about 0.5% of propylparaben;
- (xviii) from about 0.50% to about 2% of allantoin; and
- (xix) from about 0.05% to about 0.50% of fragrance;

wherein the pH of the emulsion is from about 3.0 to about 6.0, the allantoin being stable in the emulsion for at least 90 days at 40°C; and

(b) a flexible element that adsorbs or absorbs the emulsion such that the emulsion is applied to the skin of a patient on whom the flexible applicator is placed.

51. The flexible applicator of claim 50 wherein the pH of the emulsion is from about 4.5 to about 5.8.

52. A flexible applicator for applying an oil-in-water emulsion comprising:

- (a) an oil-in-water emulsion comprising:
 - (i) from about 55% to about 75% of water;
 - (ii) from about 1.0% to about 2.5% of 30% sodium lauryl sulfate
 - (iii) from about 3.0% to about 6.0% of propylene glycol;

- (iv) from about 0.1% to about 0.3% of tetrasodium EDTA;
- (v) from about 0.08% to about 0.35% of citric acid;
- (vi) from about 8.0% to about 12.0% of lanolin oil;
- (vii) from about 3.5% to about 7.5% of cetyl alcohol;
- (viii) from about 1.0% to about 3.0% of stearyl alcohol;
- (ix) from about 1.0% to about 2.5% of beeswax;
- (x) from about 1.0% to about 4.0% of cod liver oil;
- (xi) from about 0.2% to about 0.8% of butylated hydroxytoluene;
- (xii) from about 0.05% to about 0.15% of St. John's wort extract;
- (xiii) from about 0.05% to about 0.15% of witch hazel extract;
- (xiv) from about 0.05% to about 0.15% of chamomile extract;
- (xv) from about 0.05% to about 0.15% of arnica extract;
- (xvi) from about 0.15% to about 0.40% of methylparaben;
- (xvii) from about 0.10% to about 0.30% of propylparaben;
- (xviii) from about 0.50% to about 2.0% of allantoin; and
- (xix) from about 0.1% to about 0.3% of fragrance;

wherein the pH of the emulsion is from about 3.0 to about 6.0, the allantoin being stable in the emulsion for at least 90 days at 40°C; and

(b) a flexible element that adsorbs or absorbs the emulsion such that the emulsion is applied to the skin of a patient on whom the flexible applicator is placed.

53. The flexible applicator of claim 52 wherein the pH of the emulsion is from about 4.5 to about 5.8.

54. A flexible applicator for applying an oil-in-water emulsion comprising:

- (a) an oil-in-water emulsion comprising::
 - (i) about 68.68% of water;
 - (ii) about 1.9% of 30% sodium lauryl sulfate;
 - (iii) about 5.3% of propylene glycol;
 - (iv) about 0.15% of tetrasodium EDTA;
 - (v) about 0.12% of citric acid;

- (vi) about 10.6% of lanolin oil;
- (vii) about 4.2% of cetyl alcohol;
- (viii) about 2.0% of stearyl alcohol;
- (ix) about 1.90% of beeswax;
- (x) about 2.0% of cod liver oil;
- (xi) about 0.5% of butylated hydroxytoluene;
- (xii) about 0.1% of St. John's wort extract;
- (xiii) about 0.1% of witch hazel extract;
- (xiv) about 0.1% of chamomile extract;
- (xv) about 0.1% of arnica extract;
- (xvi) about 0.3% of methylparaben;
- (xvii) about 0.25% of propylparaben;
- (xviii) about 1.50% of allantoin; and
- (xix) about 0.20% of fragrance;

wherein the pH of the emulsion is from about 3.0 to about 6.0, the allantoin being stable in the emulsion for at least 90 days at 40°C; and

(b) a flexible element that adsorbs or absorbs the emulsion such that the emulsion is applied to the skin of a patient on whom the flexible applicator is placed.

55. The flexible applicator of claim 54 wherein the pH of the emulsion is from about 4.5 to about 5.8.

56. The flexible applicator of claim 1 wherein the flexible element is in the form of a bandage.

57. The flexible applicator of claim 12 wherein the flexible element is in the form of a bandage.

58. The flexible applicator of claim 14 wherein the flexible element is in the form of a bandage.

59. The flexible applicator of claim 48 wherein the flexible element is in the form of a bandage.

60. The flexible applicator of claim 50 wherein the flexible element is in the form of a bandage.

61. The flexible applicator of claim 52 wherein the flexible element is in the form of a bandage.

62. The flexible applicator of claim 54 wherein the flexible element is in the form of a bandage.

63. The flexible applicator of claim 1 wherein the flexible element is in the form of a wipe.

64. The flexible applicator of claim 12 wherein the flexible element is in the form of a wipe.

65. The flexible applicator of claim 14 wherein the flexible element is in the form of a wipe.

66. The flexible applicator of claim 48 wherein the flexible element is in the form of a wipe.

67. The flexible applicator of claim 50 wherein the flexible element is in the form of a wipe.

68. The flexible applicator of claim 52 wherein the flexible element is in the form of a wipe.

69. The flexible applicator of claim 54 wherein the flexible element is in the form of a wipe.

70. The flexible applicator of claim 1 wherein the flexible element is formed of a material selected from the group consisting of cotton, gauze, cellulose, nylon, rayon, a non-woven fabric, and a plastic polymer.

71. The flexible applicator of claim 12 wherein the flexible element is formed of a material selected from the group consisting of cotton, gauze, cellulose, nylon, rayon, a non-woven fabric, and a plastic polymer.

72. The flexible applicator of claim 14 wherein the flexible element is formed of a material selected from the group consisting of cotton, gauze, cellulose, nylon, rayon, a non-woven fabric, and a plastic polymer.

73. The flexible applicator of claim 48 wherein the flexible element is formed of a material selected from the group consisting of cotton, gauze, cellulose, nylon, rayon, a non-woven fabric, and a plastic polymer.

74. The flexible applicator of claim 50 wherein the flexible element is formed of a material selected from the group consisting of cotton, gauze, cellulose, nylon, rayon, a non-woven fabric, and a plastic polymer.

75. The flexible applicator of claim 52 wherein the flexible element is formed of a material selected from the group consisting of cotton, gauze, cellulose, nylon, rayon, a non-woven fabric, and a plastic polymer.

76. The flexible applicator of claim 54 wherein the flexible element is formed of a material selected from the group consisting of cotton, gauze, cellulose, nylon, rayon, a non-woven fabric, and a plastic polymer.